

# **Amendments to the Claims:**

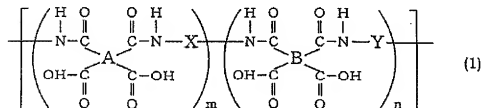
This listing of claims will replace all prior versions, and listings, of claims in the application:

## **Listing of Claims:**

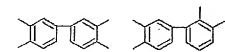
1. (Currently Amended) A laminate comprising a thermoplastic polyimide layer, and a metal layer on a surface of the thermoplastic polyimide layer,

wherein said thermoplastic polyimide layer is surface-treated by at least one treatment selected from the group consisting of a plasma treatment, a corona treatment, a coupling agent treatment, a permanganate treatment, a ultraviolet ray emitting treatment, an electron beam emitting treatment, surface treatment by colliding an abrasive at a high speed, a firing treatment, and a hydrophilization treatment,

wherein said thermoplastic polyimide layer comprises a thermoplastic polyimide which is obtained by dehydration and ring-closing a polyamic acid represented by the following general formula (1);

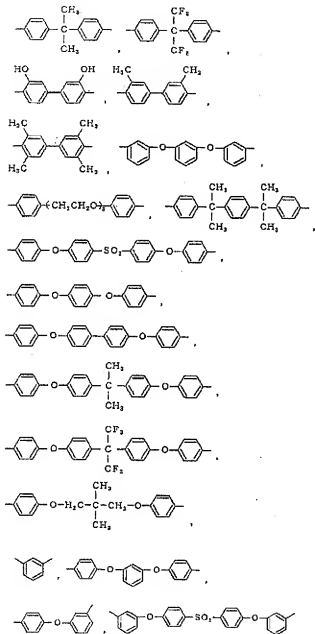


wherein A is a quadrivalent organic group selected from the following formula (2), and may be the same or different; X is a divalent organic group selected from the following formula (3), and may be the same or different; B is a quadrivalent organic group other than those represented by the formula (2) and excluding the biphenyl structures of:



, and may be the same or different; Y is a divalent





2. (Canceled)

3. (Previously Presented) The laminate of Claim 1, wherein said thermoplastic polyimide layer is surface-treated by means of an ion gun treatment.

4. (Previously Presented) The laminate of Claim 3, wherein said ion gun treatment is a treatment using argon ion.

5. (Previously Presented) The laminate of Claim 1, wherein said metal layer is formed by depositing a metal element while heating the thermoplastic polyimide layer.

6. (Previously Presented) The laminate of Claim 5, wherein a heating temperature is at least 100°C.

7. (Previously Presented) The laminate of any one of Claims 1, 3 or 4, wherein said metal layer is an electrolessly plated layer.

8. (Previously Presented) The laminate of Claim 6, wherein said metal layer is formed by at least one method selected from the group consisting of a sputtering method, a vacuum vapor deposition method, an ion plating method, an electron beam vapor deposition method, and a chemical vapor deposition method.

9. (Previously Presented) The laminate of Claim 8, wherein said metal layer comprises a first metal layer and a second metal layer.

10. (Previously Presented) The laminate of Claim 9, wherein said first metal layer comprises nickel, cobalt, chrome, titanium, molybdenum, tungsten, zinc, tin, indium, gold, or an alloy thereof.

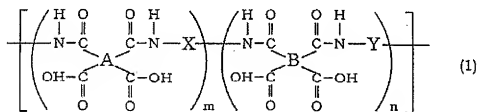
11. (Previously Presented) The laminate of Claim 10, wherein said second metal layer comprises copper or an alloy thereof.

12. (Currently Amended) A laminate comprising  
 a non-thermoplastic polyimide layer having a thermoplastic polyimide layer on at least one face; and

a metal layer formed on at least one face of surfaces of said thermoplastic polyimide layer,

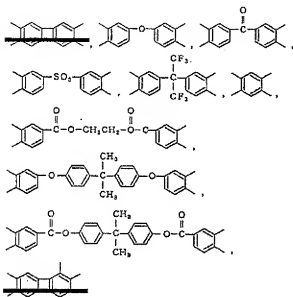
wherein said thermoplastic polyimide layer is surface-treated by at least one treatment selected from the group consisting of a plasma treatment, a corona treatment, a coupling agent treatment, a permanganate treatment, a ultraviolet ray emitting treatment, an electron beam emitting treatment, surface treatment by colliding an abrasive at a high speed, a firing treatment, and a hydrophilization treatment,

wherein said thermoplastic polyimide layer comprises a thermoplastic polyimide which is obtained by dehydration and ring-closing a polyamic acid represented by the following general formula (1);

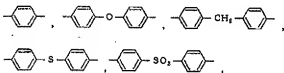


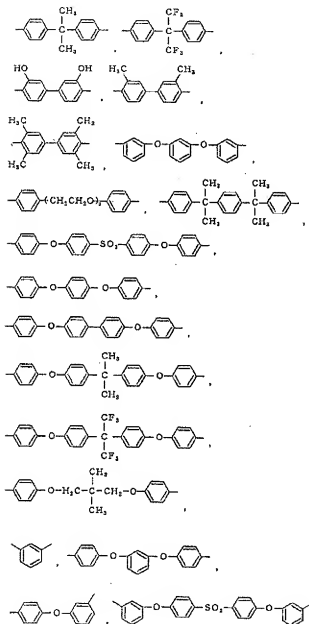
wherein A is a quadrivalent organic group selected from the following formula (2), and may be the same or different; X is a divalent organic group selected from the following formula (3), and may be the same or different; B is a quadrivalent organic group other than those represented by the formula (2), and may be the same or different; Y is a divalent organic group other than those represented by the formula (3), and may be the same or different; m : n is 100 : 0 to 50:50;

Formula (2)



Formula (3)

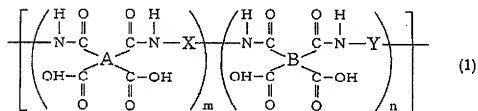




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wherein said thermoplastic polyimide layer is surface-treated by at least one treatment selected from the group consisting of a plasma treatment, a corona treatment, a coupling agent treatment, a permanganate treatment, a ultraviolet ray emitting treatment, an electron beam emitting treatment, surface treatment by colliding an abrasive at a high speed, a firing treatment, and a hydrophilization treatment,

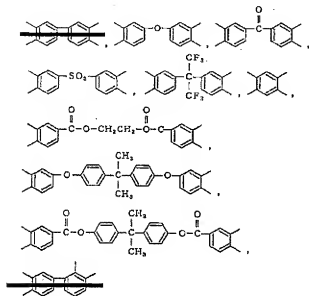
wherein said thermoplastic polyimide layer comprises a thermoplastic polyimide which is obtained by dehydration and ring-closing a polyamic acid represented by the following general formula (1);



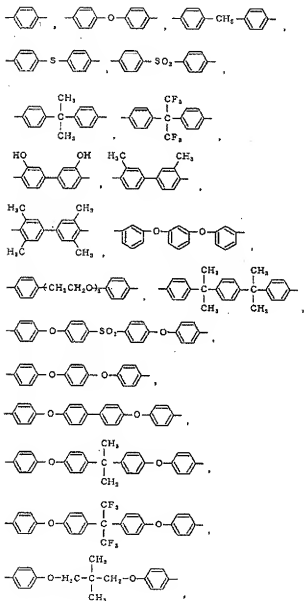
wherein A is a quadrivalent organic group selected from the following formula (2), and may be the same or different; X is a divalent organic group selected from the following formula (3), and may be the same or different; B is a quadrivalent organic group other than those represented by the formula (2), and may be the same or different; Y is a divalent organic group other than those represented by the formula (3), and may be the same or different; m : n is 100 : 0 [1] to 50:50;

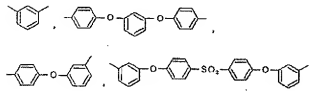
Formula (2)





Formula (3)

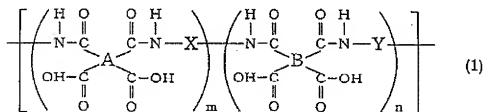




14. (Currently Amended) A laminate comprising  
a thermoplastic polyimide layer and a metal layer formed on said thermoplastic polyimide layer on one surface, and a copper foil on the other face,

wherein said thermoplastic polyimide layer is surface-treated by at least one treatment selected from the group consisting of a plasma treatment, a corona treatment, a coupling agent treatment, a permanganate treatment, a ultraviolet ray emitting treatment, an electron beam emitting treatment, surface treatment by colliding an abrasive at a high speed, a firing treatment, and a hydrophilization treatment,

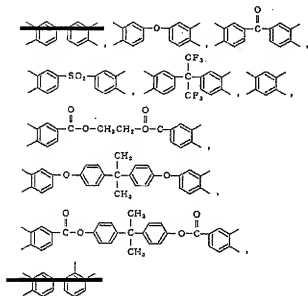
wherein said thermoplastic polyimide layer comprises a thermoplastic polyimide which is obtained by dehydration and ring-closing a polyamic acid represented by the following general formula (1);



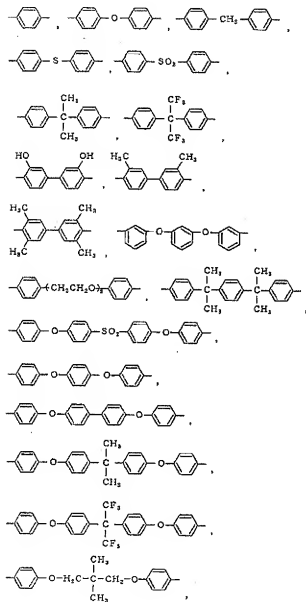
wherein A is a quadrivalent organic group selected from the following formula (2), and may be the same or different; X is a divalent organic group selected from the following formula (3), and may be the same or different; B is a quadrivalent organic group other than those represented by the formula (2), and may be the same or different; Y is a

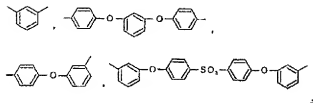
divalent organic group other than those represented by the formula (3), and may be the same or different; m : n is 100 : 0 [ ] to 50:50;

Formula (2)



Formula (3)





15. (Canceled)

16. (Previously Presented) The laminate of any one of Claims 12, 13, or 14, wherein said thermoplastic polyimide layer is surface-treated by an ion gun treatment.

17. (Previously Presented) The laminate of Claim 16, wherein said ion gun treatment is a treatment using argon ion.

18. (Previously Presented) The laminate of Claim 12, 13, or 14, wherein said metal layer is formed by depositing a metal element while heating the thermoplastic polyimide layer.

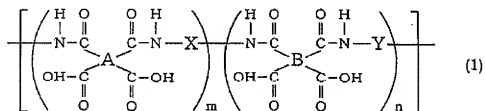
19. (Previously presented) The laminate of Claim 18, wherein a heating temperature is at least 100°C.

20. (Currently Amended) A laminate comprising a polyimide film and a metal layer,

wherein said polyimide film is at least two-layered structure which comprises a non-thermoplastic polyimide layer and a thermoplastic polyimide layer formed on at least one face of the non-thermoplastic polyimide layer; and said metal layer comprises a first metal layer which comprises nickel, cobalt, chrome, titanium, molybdenum, tungsten, zinc, tin, indium, gold, or an alloy thereof, and a second metal layer which comprises copper or an alloy thereof on the first metal layer, wherein said thermoplastic

polyimide layer is surface-treated by at least one treatment selected from the group consisting of a plasma treatment, a corona treatment, a coupling agent treatment, a permanganate treatment, a ultraviolet ray emitting treatment, an electron beam emitting treatment, surface treatment by colliding an abrasive at a high speed, a firing treatment, and a hydrophilization treatment,

wherein said thermoplastic polyimide layer comprises a thermoplastic polyimide which is obtained by dehydration and ring-closing a polyamic acid represented by the following general formula (1);



wherein A is a quadrivalent organic group selected from the following formula (2), and may be the same or different; X is a divalent organic group selected from the following formula (3), and may be the same or different; B is a quadrivalent organic group other than those represented by the formula (2), and may be the same or different; Y is a divalent organic group other than those represented by the formula (3), and may be the same or different; m : n is 100 : 0 [I]] to 50:50;

The figure displays several chemical structures of polyimide monomers and their corresponding polyimides. The monomers are shown at the top, and the resulting polyimides are shown below them, connected by vertical lines. The monomers include:

- 4,4'-diphenyl ether
- 4,4'-diphenyl sulfone
- 4,4'-diphenyl ether with a central  $\text{CF}_3$  group
- 4,4'-diphenyl ether with a central  $\text{CF}_2$  group
- 4,4'-diphenyl ether with a central  $\text{CH}_2$  group
- 4,4'-diphenyl ether with a central  $\text{CH}_2$  group and a central  $\text{CH}_3$  group
- 4,4'-diphenyl ether with a central  $\text{CH}_2$  group and a central  $\text{CH}_3$  group
- 4,4'-diphenyl ether with a central  $\text{CH}_2$  group and a central  $\text{CH}_3$  group

The polyimides are shown as repeating units with imide rings. The structures are labeled with numbers 1 through 10, corresponding to the monomers above them.





22. (Previously Presented) The laminate of any one of Claims 12, 13, 14, or 20, wherein thickness of said thermoplastic polyimide layer is at least 0.01  $\mu\text{m}$  to at most 10  $\mu\text{m}$ , and is thicker than the non-thermoplastic polyimide layer.

23-25. (Canceled)